Contents of Volume 35

Vol. 35, Nos. 1–2, September (I, II) 1997

Special issue:
Oryza: From Molecule to Plant

Guest editors:
Takuji Sasaki and Graham Moore

Preface
T. Sasaki, G. Moore 1

Comparative genetics in the grasses
K.M. Devos, M.D. Gale 3–15

Are rice chromosomes components of a holocentric chromosome ancestor?
G. Moore, L. Arágon-Alcaide, M. Roberts, S. Reader, T. Miller, T. Foote 17–23

Origin, dispersal, cultivation and variation of rice
G.S. Khush 25–34

Alien introgression in rice
D.S. Brar, G.S. Khush 35–47

Linkage map of phenotype and RFLP markers in rice
A. Yoshimura, O. Ideta and N. Iwata 49–60

Conservation of rice genetic resources: the role of the International Rice Genebank at IRRI
M.T. Jackson 61–67

Rice genetic resources: history, conservation, investigative characterization and use in Japan
M. Nakagahra, K. Okuno, D. Vaughan 69–77

Rice molecular genetic map using RFLPs and its applications
Y. Nagamura, B.A. Antonio, T. Sasaki 79–87

Microsatellite marker development, mapping and applications in rice genetics and breeding
S.R. McCouch, X. Chen, O. Panaud, S. Temnykh, Y. Xu, Y.G. Cho, N. Huang, T. Ishii, M. Blair 89–99

Physical mapping of the rice genome with YAC clones
N. Kurata, Y. Umehara, H. Tanoue, T. Sasaki 101–113

Physical mapping of the rice genome with BACs
H.-B. Zhang, R.A. Wing 115–127

A rapid and accurate strategy for rice contig map construction by combination of fingerprinting and hybridization
G. Hong 129–133

Large-scale EST sequencing in rice
K. Yamamoto, T. Sasaki 135–144

Genetic and molecular dissection of quantitative traits in rice
M. Yano, T. Sasaki 145–153

QTL analysis to study the association between leaf size and abscisic acid accumulation in droughted rice leaves and comparisons across cereals
S.A. Quarrie, D.A. Laurie, J. Zhu, C. Lebreton, A. Semikhodskii, A. Steed, H. Witsenboer, C. Calestani 155–165

Comparative genetics of flowering time
D.A. Laurie 167–177

The molecular basis of disease resistance in rice
P.C. Ronald 179–186

Towards map-based cloning of the barley stem rust resistance genes *Rpg1* and *rpg4* using rice as an intergenomic cloning vehicle
A. Kilian, J. Chen, F. Han, B. Steffenson, A. Kleinhofs 187–195

Rice transformation: bombardment
P. Christou 197–203

Transformation of rice mediated by *Agrobacterium tumefaciens*
Y. Hiei, T. Komari, T. Kubo 205–218

Transposon tagging in rice
T. Izawa, T. Ohnishi, T. Nakano, N. Ishida, H. Enoki, H. Hashimoto, K. Itoh, R. Terada, C. Wu, C. Miyazaki, T. Endo, S. Iida, K. Shimamoto 219–229

Retrotransposons of rice: their regulation and use for genome analysis
H. Hirochika 231–240

Public informatics resources for rice and other grasses
S.W. Cartinhour 241–251

Subject index 253–254

Vol. 35, No. 3, October 1997

Cloning of two plant cDNAs encoding a β-type proteasome subunit and a transformer-2-like SR-related protein: early induction of the corresponding genes in tobacco cells treated with cryptogein
A-S. Petitot, J-P. Blein, A. Pugin and L. Suty 261–269

Isolation and characterization of cDNA for a plant mitochondrial phosphate translocator (*Mpt1*): ozone stress induces *Mpt1* mRNA accumulation in birch (*Betula pendula* Roth)
M. Kiiskinen, M. Korhonen and J. Kangasjärvi 271–279

Characterization of a gene encoding a DNA-binding protein that interacts *in vitro* with vascular specific *cis* elements of the phenylalaline ammonia-lyase promoter
A. Séguin, G. Laible, A. Leyva, R.A. Dixon and C.J. Lamb 281–291

Correct blue-light regulation of pea *Lhcb* genes in an *Arabidopsis* background
J.A. Tilghman, J. Gao, M.B. Anderson and L.S. Kaufman 293–302

Molecular cloning and expression analysis of dihydroflavonol 4-reductase gene in flower organs of *Forsythia* × *intermedia*
C. Rosati, A. Cadic, M. Duron, J-P. Renou and P. Simoneau **303–311**

Analysis of multiple copies of geminiviral DNA in the genome of four closely related *Nicotiana* species suggest a unique integration event
M.K. Ashby, A. Warry, E.R. Bejarano, A. Khashoggi, M. Burrell and C.P. Lichtenstein **313–321**

Expression of a synthetic antifreeze protein in potato reduces electrolyte release at freezing temperatures
J.G. Wallis, H. Wang and D.J. Guerra **323–330**

Geranylgeranyl pyrophosphate synthase encoded by the newly isolated gene *GGPS6* from *Arabidopsis thaliana* is localized in mitochondria
YuFen Zhu, K. Suzuki, T. Saito, K. Okada, K. Tanaka, T. Nakagawa, H. Matsuda and M. Kawamukai **331–341**

Aerobic fermentation during tobacco pollen development
M. Tadege and C. Kuhlemeier **343–355**

Aldehyde dehydrogenase in tobacco pollen
R.G.L. op den Camp and C. Kuhlemeier **357–368**

***zrp2:* a novel maize gene whose mRNA accumulates in the root cortex and mature stems**
B.M. Held, I. John, H. Wang, L. Moragoda, T. Shamala Tirimanne, E.S. Wurtele and J.T. Colbert **369–378**

Expression of chalcone synthase and chalcone isomerase proteins in *Arabidopsis seedlings*
C.C. Cain, D.E. Saslowsky, R.A. Walker and B.W. Shirley **379–383**

Rare codons are not sufficient to destabilize a reporter gene transcript in tobacco
A. van Hoof and P.J. Green **385–389**

Sequence announcements **391**

Vol. 35, No. 4, November (I) 1997

Characterization of *Phaseolus vulgaris* cDNA clones responsive to water deficit: identification of a novel late embryogenesis abundant-like protein
J.M. Colmenero-Flores, F. Campos, A. Garciarrubio and A.A. Covarrubias **393–405**

Lumenal proteins involved in respiratory electron transport in the cyanobacterium *Synechocystis* sp. PCC6803
P. Manna and W. Vermaas **407–416**

Regulated expression of plant tRNA genes by the prokaryotic *tet* and *lac* repressors
B. Ulmasov, J. Capone and W. Folk **417–424**

A promoter directing high level expression in pistils of transgenic plants
M. Ficker, T. Wemmer and R.D. Thompson **425–431**

Two growth-related organ-specific cDNAs from *Cicer arietinum* epicotyls
F.J. Muñoz, B. Dopico and E. Labrador **433–442**

Expression of an Antirrhinum dihydroflavonol reductase gene results in changes in condensed tannin structure and accumulation in root cultures of *Lotus corniculatus* (bird's foot trefoil)
A.D. Bavage, I.G. Davies, M.P. Robbins and P. Morris **443–458**

cDNA sequence, genomic organization and differential expression of three *Arabidopsis* genes for germin/oxalate-like proteins
N. Membré, A. Berna, G. Neutelings, A. David, H. David, D. Staiger, J.S. Vásquez, M. Raynal, M. Delseny and F. Bernier **459–469**

Molecular characterization of glyoxalase II from *Arabidopsis thaliana*
M.K. Maiti, S. Krishnasamy, H.A. Owen and C.A. Makaroff **471–481**

Cloning and characterization of rac-like cDNAs from *Arabidopsis thaliana*
P. Winge, T. Brembu and A.M. Bones **483–495**

Two genes encoding extensin-like proteins are predominantly expressed in tomato root hair cells
M. Bucher, B. Schroeer, L. Willmitzer and J.W. Riesmeier **497–508**

Differential modification or flavonoid and isoflavonoid biosynthesis with an antisense chalcone synthase construct in transgenic *Lotus corniculatus*
S.P. Colliver, P. Morris and M.P. Robbins **509–522**

Gene targeting approaches using positive-negative selection and large flanking regions
T. Thykjær, J. Finneman, L. Schauser, L. Christensen, C. Poulsen and J. Stougaard **523–530**

Short communication

Isolation, characterization and molecular cloning of a leaf-specific lectin from ramsons (*Allium ursinum* L.).
K. Smeets, E.J.M. Van Damme, F. Van Leuven and W.J. Peumans **531–535**

Erratum **537**

Vol. 35, No. 5, November (II) 1997

Isolation and characterization of an *Arabidopsis* biotin carboxylase gene and its promoter
X. Bao, B.S. Shorrosh and J.B. Ohlrogge **539–550**

Isolation of the cDNAs encoding (+)6a-hydroxymaackiain 3-*O*-methyltransferase, the terminal step for the synthesis of the phytoalexin pisatin in *Pisum sativum*
Q. Wu, C.L. Preisig and H.D. VanEtten **551–560**

Developmental, stress and ABA modulation of mRNA levels for bZip transcription factors and Vp1 in barley embryos and embryo-derived suspension cultures
K. Hollung, M. Espelund, K. Schou and K.S. Jakobsen **561–571**

***Eucalyptus* has functional equivalents of the *Arabidopsis AP1* gene**
J. Kyozuka, R. Harcourt, W.J. Peacock and E.S. Dennis **573–584**

Characterization of the gene family for alternative oxidase from *Arabidopsis thaliana*
D. Saisho, E. Nambara, S. Naito, N. Tsutsumi, A. Hirai and M. Nakazono **585–596**

UDP-glucose:sterol glycolsyltransferase: cloning and functional expression in *Escherichia coli*
D.C. Warnecke, M. Baltrusch, F. Buck, F.P. Wolter and E. Heinz **597–603**

Cloning and expression of the pea gene encoding SBP65, a seed-specific biotinylated protein
L. Dehaye, M. Duval, D. Viguier, J. Yaxley and D. Job **605–621**

Heteromeric assembly of the cytosolic glutamine synthetase polypeptides of *Medicago truncatula*: complementation of a *glnA Escherichia coli* mutant with a plant domain-swapped enzyme
H. Carvalho, C. Sunkel, R. Salema and J.V. Cullimore **623–632**

Expression of glyoxylate cycle genes in cucumber roots responds to sugar supply and can be activated by shading or defoliation of the shoot
I. Ismail, L. De Bellis, A. Alpi and S.M. Smith **633–640**

Cloning and characterisation of a cytosolic glutathione reductase cDNA from pea (*Pisum sativum* L.) and its expression in response to stress
R.G. Stevens, G.P. Creissen and P.M. Mullineaux **641–654**

Short communications

Structural analysis of rDNA in the genus *Nicotiana*
N.V. Borisjuk, Y.M. Davidjuk, S.S. Kostishin, G.P. Miroshnichenco, R. Velasco, V. Hemleben and R.A. Volkov **655–660**

Induction of a *Citrus* gene highly homologous to plant and yeast *thi* genes involved in thiamine biosynthesis during natural and ethylene-induced fruit maturation
D. Jacob-Wilk, E.E. Goldschmidt, J. Riov, A. Sadka and D. Holland **661–666**

Cloning of upstream sequences responsible for cell cycle regulation of the *Nicotiana sylvestris CycB1*; 1 gene
C. Tréhin, I.-O. Ahn, C. Perennes, F. Couteau, E. Lalanne and C. Bergounioux **667–672**

***In vivo* characterization of transcriptional regulatory sequences involved in the defence-associated expression of the tobacco retrotransposon Tnt1**
S. Vernhettes, M.-A. Grandbastien and J.M. Casacuberta **673–679**

Sequence announcement **681**

Vol. 35, No. 6, December 1997

Original Articles

Sequential expression of two 1-aminocyclopropane-1-carboxylate synthase genes in response to biotic and abiotic stresses in potato (*Solanum tuberosum* L.) leaves
C.D. Schlagnhaufer, R.N. Arteca, E.J. Pell **683–688**

Analysis of microspore-specific promoters in transgenic tobacco
J.B.M. Custers, M.T. Oldenhof, J.A.M. Schrauwen, J.H.G. Cordewener, G.J. Wullems, M.M. van Lookeren Campagne **689–699**

Induction of a ribosome-inactivating protein upon environmental stress
J.F. Rippmann, C.B. Michalowski, D.E. Nelson, H.J. Bohnert **701–709**

Differential expression of two tomato lactate dehydrogenase genes in response to oxygen deficit
V. Germain, P. Raymond, B. Ricard **711–721**

Nitrogen availability and electron transport control the expression of *glnB* gene (encoding PII protein) in the cyanobacterium *Synechocystis* sp. PCC 6803
M. García-Domínguez, F.J. FLorencio **723–734**

Lysine-ketoglutarate reductase and saccharopine dehydrogenase from *Arabidopsis thaliana*: nucleotide sequence and characterization
S. Epelbaum, R. McDevitt and S.C. Falco **735–748**

Primary structure and expression of acidic (class II) chitinase in potato
R. Büchter, A. Strömberg, E. Schmelzer, E. Kombrink **749–761**

Isolation and characterization of a *dnaK* genomic locus in a halotolerant cyanobacterium *Aphanothece halophytica*
B.H. Lee, T. Hibino, J. Jo, A.M. Viale, T. Takabe **763–775**

Characterization and heterologous expression of hydroxycinnamoyl/benzoyl-CoA: anthranilate N-hydroxycinnamoyl/benzoyltransferase from elicited cell cultures of carnation, *Dianthus caryophyllus* L.
Q. Yang, K. Reinhard, E. Schiltz, U. Matern **777–789**

Repetitive sequences: cause for variation in genome size and chromosome morphology in the genus *Oryza*
S. Uozu, H. Ikehashi, N. Ohmido, H. Ohtsubo, E. Ohtsubo, K. Fukui **791–799**

Expression analysis of a gene family in loblolly pine (*Pinus taeda* L.) induced by water deficit stress
V. Padmanabhan, D.M.A.L. Dias, R.J. Newton **801–807**

Mitochondrial protein import: modification of sulfhydryl groups of the inner mitochondrial membrane import machinery in *Solanum tuberosum* inhibits protein import
E.M. von Stedingk, P.F. Pavlov, V.A. Grinkevich, E. Glaser **809–820**

Molecular organization of a gene in barley which encodes a protein similar to aspartic protease and its specific expression in nucellar cells during degeneration
F. Chen, M.R. Foolad **821–831**

Molecular characterisation of a cDNA sequence encoding the backbone of a style-specific 120 kDa glycoprotein which has features of both extensins and arabinogalactan proteins
C.J. Schultz, K. Hauser, J.L. Lind, A.H. Atkinson, Z. Pu, M.A. Anderson, A.E. Clarke **833–846**

ER5, a tomato cDNA encoding an ethylene-responsive LEA-like protein: characterization and expression in response to drought, ABA and wounding
H. Zegzouti, B. Jones, C. Marty, J.-M. Lelièvre, Alain Latché, Jean-Claude Pech, M. Bouzayen **847–854**

Structure and specific expression of a *Nicotiana sylvestris* putative amino-acid transporter gene in mature and *in vitro* germinating pollen
E. Lalanne, C. Mathieu, O. Roche, F. Vedel, R. De Pape **855–864**

Molecular characterization of the AP19 gene family in *Arabidopsis thaliana*: components of the Golgi AP-1 clathrin assembly protein complex
I.E. Maldonado-Mendoza, C.L. Nessler **865–872**

Characterization of the cyclophilin gene family of *Arabidopsis thaliana* and phylogenetic analysis of known cyclophilin proteins
I.T. Chou, C.S. Gasser **873–892**

Characterization of *TSCL*, a nonviral retroposon from *Arabidopsis thaliana*
M.-L. Chye, K.-Y. Cheung, J. Xu **893–904**

Expression of a gene encoding a ribosomal p40 protein and identification of an active promoter site
I. Scheer, M.D. Ludevid, F. Regad, B. Lescure, R.F. Pont-Lezica **905–913**

Cloning and molecular analysis of structural genes involved in anthocyanin biosynthesis and expressed in a forma-specific manner in *Perilla frutescens*
Z. Gong, M. Yamazaki, M. Sugiyama, Y. Tanaka, K. Saito **915–927**

A sucrose repression element in the *Phaseolus vulgaris rbcS2* gene promoter resembles elements responsible for sugar stimulation of plant and mammalian genes
N.A.R. Urwin, G.I. Jenkins **929–942**

Short communications

Variable $(CA/GT)_n$ simple sequence repeat DNA in the alga *Chlamydomonas*
T.-J. Kang, M.W. Fawley **943–948**

Two *Idh* genes from tomato and their expression in different organs, during fruit ripening and in response to stress
V. Germain, B. Ricard **949–954**

Genomic organization of *hsp90* gene family in *Arabidopsis*
D. Milioni, P. Hatzopoulos **955–962**

Visual verification of close disposition between a rice A genome-specific DNA sequence (TrsA) and the telomere sequence
N. Ohmido, K. Fukui **963–968**

A novel gene of tomato preferentially expressed in fruit encodes a protein with a Ca^{2+}-dependent lipid-binding domain
T. Kiyosue, C.A. Ryan **969–972**

Homologous and heterologous protein import into mitochondria isolated from the green alga *Chlamydomonas reinhardtii*
G. Nurani, M. Eriksson, C. Knorpp, E. Glaser, L.-G. Franzén **973-980**

Morphological changes and hypomethylation of DNA in transgenic tobacco expressing antisense RNA of the *S*-adenosyl-L-homocysteine hydrolase gene
H. Tanaka, C. Masuta, K. Uehara, J. Kataoka, A. Koiwai, M. Noma **981–986**

The single-copy gene encoding high-mobility-group protein HMG-I/Y from pea contains a single intron and is expressed in all organs
R. Gupta, C.I. Webster, J.C. Gray **987–992**

Context sequences of translation initiation codon in plants
C.P. Joshi, H. Zhou, X. Huang, V.L. Chiang **993–1001**

Maturation and translation mechanisms involved in the expression of a *myb* gene of rice
F. Magaraggia, G. Solinas, G. Valle, G. Giovinazzo, I. Coraggio **1003–1008**

A floral third whorl-specific marker gene in the dioecious species white campion is differentially expressed in mutants defective in stamen development
S. Hinnisdaels, A. Lardon, N. Barbacar, I. Negrutiu **1009–1014**

Mitochondrial malate dehydrogenases in *Brassica napus*: altered protein patterns in different nuclear mitochondrial combinations
U. Witt, R. Lührs, F. Buck, K. Lembke, M. Grüneberg-Seiler, W. Abel **1015–1021**

Methylation of somatic and sperm DNA in the homosporous fern *Ceratopteris richardii*
J.M. McGrath, E. Pichersky **1023–1027**

Wound and ethylene induction of the ACC oxidase melon gene *CM-AC01* occurs via two direct and independent transduction pathways
T. Bouquin, E. Lasserre, J. Pradier, J.-C. Pech, C. Balagué **1029–1035**

Coactivators and TAFs of transcription activation in wheat
K.B. Washburn, E.A. Davis, S. Ackerman **1037–1043**

Cloning of genes whose expression is correlated with mitosis and localized in dividing cells in root caps of *Pisum sativum* L.
H.-H. Woo, M.C. Hawes **1045–1051**

Isolation and characterisation of tobacco (*Nicotiana tabacum*) cDNA clones encoding proteins involved in magnesium chelation into protoporphyrin IX
E. Kruse, H.-P. Mock, B. Grimm **1053–1056**

Cloning and characterisation of *MEK1*, an *Arabidopsis* gene encoding a homologue of MAP kinase kinase
P.C. Morris, D. Guerrier, J. Leung, J. Giraudat **1057–1064**

Sequence announcements

EMBL
I. Capesius, K. Warpeha **1065**

EMBL
K. Warpeha, I. Capesius **1067**

A. Gauther, P.J. Gulick, R.K. Ibrahim **1069**

Instructions to authors **1071–1074**

Contents of Volume 35 **1075–1082**

Author index **1083–1084**